CARTER COUNTY AGRICULTURE & NATURAL RESOURCES NEWSLETTER



University of Kentucky College of Agriculture, Food and Environment Cooperative Extension Service

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November 2022 Upcoming Events

Denotes events where preregistration is required. Call 474-6686 or email Rebecca.k@uky.edu to register.

October 31 @ 6:00 PM	Ag Advancement Council Meeting—Carter County Extension Office
November 1 @ 6:00 PM	Little Sandy Beekeepers—Carter County Extension Office
November 1 @ 6:00 PM	*Fertilizer Academy—Online*
November 3 @ 9:30 AM	*Popup Driver Licensing—Carter County Extension Office*
November 3 @ 6:00 PM	*Estate Planning—Online*
November 8 @ 10:00 AM	District Board Meeting — Carter County Extension Office
November 8 @ 10:00 AM	*Crop Webinar (Weed Control) - Online*
November 8 @ 6:00 PM	*Fertilizer Academy—Online*
November 8 @ 8:00 PM	*Beef Webinar (Winter Feeding Considerations) - Online*
November 14 @ 6:00 PM	*East KY Hay Contest Awards—Morgan County Extension Office*
November 15 @ 10:00 AM	*Crop Webinar (Soilborne Diseases) - Online*
November 15 @ 6:00 PM	Northeast Area Livestock Association—Carter County Extension Office
November 15 @ 6:00 PM	*Fertilizer Academy—Online*
November 17 @ 6:00 PM	*Estate Planning—Online*
November 22 @ 4:30 PM	Mineral Order Deadline—Carter County Extension Office
November 24-25	Happy Thanksgiving—Extension Office Closed
November 29 @ 7:30 PM	*Beekeeping Webinar (Types & Properties of Honey) - Online*
December 1 @ 6:00 PM	*Estate Planning—Online*
December 6 @ 6:00 PM	*Little Sandy Beekeepers—Carter County Extension Office*
December 14 @ 12:00 PM	*Holiday Vases Workshop—Carter County Extension Office*

Enjoy your newsletter,

Repecca Konopla

Rebecca Konopka, Carter County Extension Agent for Agriculture & Natural Resources Education

Cooperative Extension Service Agriculture and Natural Resources Family and Consumer Sciences 4-H Youth Development Community and Economic Development Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability. University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating.



Order Winter Group Minerals Now!

It's time to place your order for winter group minerals. Kee's Farm Service won the bid this time and will be providing two minerals for you to choose from:

UK IRM Basic Cow/Calf Mineral containing High Magnesium—\$22.75 per 50-lb bag

UK IRM Basic Cow/Calf Mineral—\$19.25 per 50-lb bag

Mineral orders must be placed by Tuesday, November, 22nd by calling the Carter County Extension Office at 474-6686. Minerals can be picked up at Kee's Farm Service on or after Friday, December 16th.

Which Mineral Do I Feed When?

Spring Calving Herds

January — Mid-May: High Magnesium Mineral

- Supplement with high magnesium mineral at least 30 days prior to calving. Cows need 20 grams of magnesium daily or 4 oz/day of a 15% magnesium mineral mix. Continue providing magnesium in the mineral mix until daytime temperatures are consistently above 60° F.
- Mid-May December: Basic/Cow Calf Mineral
 - Provide a free-choice mineral mix containing adequate levels of phosphorus, vitamin A, selenium, copper, zinc and other trace minerals at all times.

Fall Calving Herds

- August October: High Magnesium Mineral
 - Supplement with high magnesium. If the temperature is unseasonably warm, continue using a high magnesium mineral through November.
- November July: Basic/Cow Calf Mineral
 - Provide a free-choice mineral mix containing adequate levels of phosphorus, vitamin A, selenium, copper, zinc and other trace minerals at all times.



POPUP





POPUP DRIVER LICENSING PORTABLE DRIVER LICENSING OFFICE The Popup Driver Licensing Initiative uses portable technology to bring driver licensing services to

areas without a regional office a few times a year.



IT'S YOUR CHOICE REAL ID OR A NEW STANDARD ID CARD

These services include renewing or applying for a REAL ID or new standard card version of driver license, or an ID card.



DOUBLED CARD LIFESPAN CHOOSE FOUR OR EIGHT-YEAR OPTIONS A REAL ID & a new standard card version are available

A REAL ID & a new standard card version are available with a choice of four-year or eight-year expiration.



EVENT: Carter County Extension office -WHERE Education Building DATE AND TIME: NOV, 3rd beginning at 9:30 Am Make your appointment at Drive.ky.gov



Little Sandy Beekeeper News

Upcoming Meetings

November 1st @ 6:00 PM

Speaker: Wade Stiltner, Retired WV Apiarist

Topic: Preparing for Winter

December 6th @ 6:00 PM

Speaker: Dr. Tom Webster, KSU Entomologist

Topic: Digestive System of the Honey Bee

If you plan to attend the December meeting please let us know so we can plan accordingly for the meal.

After 12 years of service, LSBA president John Blasius will be stepping down. We are so appreciative of John's service! We will have officer elections in December. Please consider running for office so that we can continue the good work of the Association.

Equipment Available for Use

3/12 Frame Honey Extractor

Oxalic Acid Vaporizer



Cover Crop Establishment

Dr. Erin Haramoto, UK Associate Professor Plant and Soil Sciences Department

This dry fall weather may be great for harvesting, but it's not ideal for establishing cover crops. Just like any other crop, cover crop seed needs moisture to establish and that is certainly in short supply this fall. There is some rain in the forecast over the next couple of weeks, and that will hopefully be enough to get cover crops (and our wheat) established. Even a moderate cover crop stand will protect soil from erosion, and bring additional benefits, over the winter and spring period. With limited moisture, and with seed costs being higher this year, how can you increase the odds of successful establishment? First, when it's dry, cover crop establishment will be better if you can drill the seed. Planting the seed into the soil puts it in closer contact with moisture, which will aid in germination and emergence. Broadcasting seed onto dry soil is very risky, especially if there is not regular rain in the forecast. If you have to broadcast, try some vertical tillage or packing to improve seed-to-soil contact. (Remember, however, that tillage can dry out the soil and increase erosion.) Smaller seeds such as clovers need to be planted shallower for successful emergence, while seeds such as wheat and cereal rye can be planted deeper where there may be more moisture. These small grains may be better options in dry conditions. (Plus, see the next point – it's getting late for species other than wheat, cereal rye, or triticale!)

Second, make sure you're watching planting dates and optimal planting windows. Don't push them by planting species too late. Some species, like crimson clover, needs to reach a certain size to successful over-winter. If planted late and it stays dry, plants are unlikely to reach that size. University of Kentucky Cooperative Extension publication AGR-18 gives planting date windows for many common cover crop species. The Southern Cover Crops Council

(www.southerncovercrops.org) also has multiple cover crop fact sheets, and information on planting, managing, and terminating cover crops. Third, make sure your residual herbicide program won't interfere with the cover crop germination and establishment. The University of Wisconsin has a guide for this (<u>tinyurl.com/3ehmr3nh</u>); it outlines numerous pre-plant herbicides in corn and soybean, and whether damage might occur for different types of cover crops planted that same fall. Also see this newsletter article from Ohio State (<u>tinyurl.com/4n744vr3</u>) for a simpler table. (It gives names of herbicide active ingredients rather than products, but you can match your herbicide name to its active ingredient online.) *If you will graze these cover crops or harvest them for forage*, you MUST adhere to the rotational restrictions on the herbicide label.

As always, when choosing cover crops, consider your goals, as well as your location (soil and climate), your cropping system (when can you plant and when do you want to terminate), and available equipment. Goals for cover cropping may include reducing soil erosion or suppressing winter weeds (including marestail). In dry years, cash crops may not take up all the nutrients applied in the spring, so capturing these before they are lost may be an important goal for cover crop plantings this fall. When seed costs are high, consider the most economical species to accomplish your goals.

Fall Grazing Sins Impact Future Forage Growth

[~]Mike Rankin, Hay and Forage Grower (UK Forage News) No time is a good time to abuse pastures by overgrazing, shortening rest periods, or overstocking, but fall is an especially bad time for such agrarian offenses. "Management decisions made during the fall affect the ability of the plants to overwinter, determine when new growth is initiated in the spring, and impacts how much total forage growth will be produced over the following season," says Gene Pirelli, professor emeritus in animal and rangeland sciences with Oregon State University.

When pastures are overgrazed or subjected to excessive forage harvesting in the fall, it inhibits root system rebuilding and the formation of shoots for spring growth. Pirelli explains that roots regenerate in the fall while potential new shoots are also in the process of forming. Plants need time to store carbohydrates to ensure long-term forage production.

"The lower stems or crown, rather than the roots, are the major storage unit of complex carbohydrates in

perennial grasses," Pirelli states. "The new root system will take up water from the soil plus important nutrients that nurture those new growing points. Both plant systems must work together to sustain pasture growth in the next grazing season." The actual time it takes for new root growth varies depending upon the amount of moisture from irrigation or rainfall, daylength, and the residual stubble height. New plant roots are evident if plants are dug up and washed free of any soil. The new roots will be white, variable in length, and originate from the crown.

Plant growing points develop in the fall, which provide next spring's forage growth. Pirelli contrasts these young grass shoots, or tillers, to human babies — both need a steady supply of nutrients and protection from stress. In the fall, nutrients are supplied from the previous season's tillers, which have stored carbohydrates in the bottom 3 to 4 inches of the plant. The existing tillers are often dormant and brown during fall — but not dead — and their storage function is critical. The older tillers also provide physical protection to the new tillers.

If pastures are grazed or mowed lower than a 3- to 4- inch stubble height in the fall, the plant's carbohydrate reserves are reduced, and the new tillers are robbed of their food source. Also, the new tillers are exposed to weather extremes. Overgrazing also slows or stops root formation, and in the following spring, the new tillers grow slower and have fewer roots for needed nutrients.

Grass species vary in how sensitive they are to grazing or cutting height. The following recommendations provide a minimum residual height for some common grass species: Orchardgrass and Tall Fescue: 3 to 4 inches; KY Bluegrass: 2 to 3 inches; Perennial ryegrass: 2 inches; Timothy: 4 to 6 inches.







Spring Regrowth on Sod dug from a rested pasture and overgrazed pasture (the full timelapse video is available on the KY Forages YouTube Channel under the Timelapse Forage Video Playlist)



 Oct. 25: Breeding and performance of bees with Varroa Sensitive Hygiene, with F. Rinkevich (USDA-ARS) 	the
Nov. 29: Liquid gold: A crash course on the types and properties of honey,	6.20
with P. Lau (USDA-ARS)	6:30 -
 Jan. 31: Seasonal efficacy of Varroa treatments, with C. Jack (UFL) 	Centi
Watch via Zoom Webinar	

https://auburn.zoom.us/j/904522838

or Facebook Live: https://www.facebook.com/LawrenceCountyextension/ Questions? Email Allyson Shabel ams0137@aces.edu

Our institutions are equal opportunity educators and employers. Everyone is welcome! Please let us know if you have accessibility needs.

Northeast Area Livestock

Association Cattle Meeting

November 15th @ 6:00 PM

Speaker: Dr. Darrh Bullock, UK Beef Specialist

Topic: Targeted Bull Selection



Developing a Herbicide Tolerant Red Clover for Kentucky

~ Dr. Mike Barrett (UK Forage News) Adding red clover into grass-based pastures has many benefits but red clover is highly susceptible to herbicides, such as 2,4-D, used for broadleaf weed management in pastures. In 2005, Dr. Norman Taylor began a project to create a 2,4-D tolerant red clover for Kentucky by crossing a 2,4-D tolerant red clover line from the University of Florida with Kenland red clover. Dr. Mike Barrett took over responsibility for the project when Dr. Taylor retired. Over the next 9 years, the progeny from this cross were subject to further selection, treating them with ever higher rates of 2,4-D and preserving the best survivors. To test the 2,4-D tolerance of the resulting red clover line, designated as UK2014, his research group conducted a field test comparing the 2,4- D tolerance of UK2014 to Kenland. While UK2014 is clearly more 2,4-D tolerant than Kenland, Dr. Barrett wanted to see if further selection, under very severe pressure (dipping plants into a 2,4-D solution), could raise the tolerance of UK2014 to 2 Lb. per acre of 2,4-D. Plants grown from seed of plants which survived this treatment through 2 rounds and are currently being grown in the field by Ray Smith and Gabriel Roberts to increase the seed from the selected population. This involves growing the plants in cages to prevent crosspollination from other red clover, introducing bumble bees (the preferred bee species for pollinating red clover) to the cages, and harvesting the seed pro-

duced. Initial greenhouse trials indicate the new selection is more 2,4-D tolerant than UK2014 and, when additional seed is available, this will be tested in field trials.



month

7:30 pm

al Time

Soil Acidity: What It Is, How It Is Measured, Why It Is Important

Dr. John Grove, UK Professor of Agronomy/Soils Research and Extension & Dr. Edwin Ritchey, Extension Soils Specialist

The chemical health of the soil supporting your crop is strongly related to soil pH and fall is the best time to correct excess soil acidity. Soils are usually dry and application traffic compaction is less likely. Lime takes time to react, to neutralize soil acids, and fall application allows greater acidity reduction prior to spring planting. Soil samples may be a bit difficult to take when the soil is dry (as is the case in much of Kentucky right now), but the benefits to early detection and correction of acid soils in your crop production fields can be very significant.

Soil acidity consists of acid cations, hydrogen (H+), aluminum (Al3+), and in some soils, manganese (Mn2+). These acids are neutralized by basic anions, carbonate (CO32-), hydroxyl (OH-), and oxide (O2-) provided by materials like agricultural, hydrated/slaked, and quick/burnt limes, respectively. Agricultural (ag) lime, consisting of different proportions of calcium and magnesium carbonates and crushed/ground to smaller particle sizes to speed acidity correction, is the material most often used to correct soil acidity in crop production fields. Rates of ag lime are found from measurements of acidity in your soil sample.

One important measure of soil acidity is soil pH, which is measured by electrodes placed in suspensions (Figure 1) of a portion of the soil sample in water or a simple salt solution (calcium chloride, CaCl2, or potassium chloride, KCl). Salt solutions are more appropriate when drought results in fertilizer salt residues in fall soil samples, as is true this fall. This summer's drought was not uniform, statewide, and resulting fertilizer salt carryover is both significant and variable, causing lower and noisier than usual pH values in soil plus water suspensions. The University of Kentucky (UK) soil test lab determines soil pH in a suspension of soil and KCl solution that 'swamps' salt carryover differences in our samples. The KCl pH values are converted to water pH values using an equation: water pH = (0.91 x KCl pH) + 1.34.

The pH measured these suspensions is related to the hydrogen ion (H+) activity of the soil-water system. The **chemical** definition of pH is that pH = - log(H+). In other words, for a pH drop of 1 unit (e.g., from pH 6 to pH 5) there will be a ten-fold increase in H+ activity in the soil solution. If pH rises by 1 unit, only one-tenth as much acidity will be present in the solution. As such, these pH measurements only determine the **active acid-***ity* in the soil water solution bathing plant roots. This fraction of total soil acidity is extremely small. It would take less than a half-pound of calcitic lime per acre to neutralize the active acidity contained in the soil solution of 8 inches of pH 5 silt loam topsoil at field moisture.

The much, much larger portion of total soil acidity, termed **potential (reserve) acidity**, resides on the surface of soil clay and organic matter particles. This particle surface acidity is in equilibrium with the solution active acidity, and the greater the clay or organic matter content, the greater the soil's ability to resist solution pH changes by either releasing or adsorbing H+. This resistance is the soil's **buffer capacity**. Soils with different

textures (sandy vs. silty vs. clayey) can have the same level of active acidity, the same pH in soil plus water/simple salt suspensions, but these soils will have very different quantities of potential/reserve acidity. This causes soil test labs to use another measurement approach to get at potential/reserve acidity, the buffer pH/lime requirement test. Measurement of the soil potential/reserve acidity is done by suspending a portion of the soil sample in a chemical buffer solution that competes with the soil's buffer capacity and reacts with the particle surface acidity. The UK soil test lab uses the Sikora II buffer, which has a preset pH of 7.5. The lower the pH of the soil plus Sikora II buffer suspension, the greater the soil's potential/reserve acidity and the great-er the lime requirement needed to neutralize that acidity.



Figure 1. Measurement of soil pH (photo courtesy UK Regulatory Services website).

Understanding your soil's acidity status is important. Soil pH can serve as a general indicator of soil nutrient availability, much like body temperature indicates general animal health. Soil pH values between 6.4 and 7.0 promote nodulation of legumes and the biological nitrogen fixation that sustains these crops. Low pH can slow biological mineralization of organic matter and crop residues, slowing release of organic nitrogen, phosphorus, and sulfur.

As soil acidity rises, soil pH falls and potentially toxic elements like manganese and aluminum become more soluble and available for plant uptake. Acid

Table 6. Rate of 100% effective limestone (tons/A) needed to raise soil pH to 6.4.

(
Water pH	Buffer pH of Sample							If Buffer pH	
of Sample	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	is Unknown
4.5	4.50	4.25	4.00	3.50	3.00	2.50	2.00	1.50	2.75
4.7	4.50	4.25	4.00	3.50	3.00	2.50	2.00	1.50	2.75
4.9	4.50	4.25	3.75	3.25	2.75	2.25	1.75	1.25	2.75
5.1	4.50	4.25	3.75	3.25	2.75	2.25	1.75	1.25	2.75
5.3	4.50	4.25	3.75	3.25	2.50	2.00	1.50	1.00	2.25
5.5	4.50	4.25	3.50	3.00	2.50	2.00	1.50	1.00	2.00
5.7	4.50	4.00	3.50	2.75	2.25	1.75	1.25	1.00	1.75
5.9		4.00	3.25	2.50	2.00	1.50	1.00	0.75	1.25
6.1			2.75	2.00	1.50	1.00	0.75	0.50	1.00

Table 6 from Ritchey and McGrath. 2020. AGR-1, 2020-21 Lime and Nutrient Recommendations. UK Cooperative Extension Service. Lexington, KY.

soils reduce the solubility and uptake of other nutrients, especially phosphorus and molybdenum. Surface soil acidity can reduce the effectiveness of triazine herbicides. Alkaline soils with excessively high soil pH values also often exhibit potential for nutrient stress. Deficiencies of zinc, manganese, and phosphorus have

been observed on high pH soils in Kentucky. Boron, copper, and iron deficiencies have been reported in other states. Over-liming, whether due to excessive application rates or improper spreader operation, should be avoided.

Different crops have different soil pH needs. UK publication AGR-1 provides pH and lime information for many crops. Blueberries, potato, and azaleas grow well at lower soil pH values, tolerating the greater acidity and related chemical conditions. Corn and soybean require greater pH values and UK recommends lime to reach a target pH of 6.4 when the soil pH falls below 6.2.

Finally, soil pH is rather slow to change, either up or down in our silt loam/silty clay loam soils. Don't expect soil pH to reach your target pH 6 months after application – it may take over a year. That said, taking soil samples every 2 to 3 years is adequate for monitoring this important soil health parameter.

University of Kentucky 2022 Crop Pest Management Webinar Series begins in November

Information regarding your pest management questions is just a few mouse clicks away. As offered in previous years, the University of Kentucky has once again organized five webinars on field crop protection topics that will be hosted through the Southern Integrated Pest Management Center beginning on Nov. 8, 2022. The weekly webinars will feature University of Kentucky Extension Specialists speaking on topics ranging from Weed Science, Plant Pathology and Entomology.

Credits have been applied for regarding Kentucky Pesticide Applicator credits and Certified Crop Advisor continuing education. Pre-registration for the webinars is required through the registration URL provided. Dates, speakers and registration links are listed below. All webinars will begin at 10 a.m. EST/ 9 a.m. CST, on the Tuesday morning listed. For more information contact Jason Travis, Agricultural Extension Associate for the University of Kentucky, at (859) 562 -2569 or by email at jason.travis@uky.edu.

Title: Weed Control Lessons Learned From the 2022 Crop Season



Webinar#1

Date: November 8, 2022

Speaker: Dr. JD Green







 Webinar #3

 Date: November 22, 2022

 Speaker: Dr. Travis Legleiter

 Title: Implementing Defensive Shifts Against Problematic Kentucky Weeds

 Registration URL: https://zoom.us/webinar/register/WN_QnugWPJJQUynBXDf4io9zg



 Webinar #4

 Date: December 6, 2022

 Speaker: Dr. Kiersten A. Wise

 Title: Corn Disease Management Questions Asked in 2022

 Registration URL: https://zoom.us/webinar/register/WN_KwibLTsHQY6oJjiKzURCEQ

4.4



 Webinar #5

 Date: December 13, 2022

 Speaker: Dr. Raul Villanueva

 Title: Entomological Studies in Corn and Soybeans Under Difficult Circumstances (Covid, and Tornado and Drought) in 2022

 Registration URL:
 https://zoom.us/webinar/register/WN_3KVwBMYKQYKnxzW1K-A0-g



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NOVEMBER 2022

CARTER COUNTY AGRICULTURE & NATURAL RESOURCES NEWSLETTER

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